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ABSTRACT

This study tests the hypothesis that persons will express relatively independent degrees of preference for ambiguity in different experiential domains. An original measure consisting of four subscales was developed to assess individual differences in the theoretical, social, economic and aesthetic domains, and was administered to a student sample. Comparisons between split half reliabilities of each subscale, and correlations with other subscales support the hypothesis in the theoretical, social and aesthetic domains. Results are interpreted as indicating that tolerance for ambiguity may be stable within but not across experiential domains. It is suggested that appropriate measurement may best be achieved by conceptualizing tolerance for ambiguity as a domain specific trait. (Author)

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Domain Specificity in Tolerance for Ambiguity[1]

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Domain Specificity in Tolerance for Ambiguity

Development over the past 25 years of a number of measures to assess tolerance for ambiguity appears to reflect remarkable theoretical and practical progress since Frenkel-Brunswik (1949) drew attention to this variable. However, research reveals that many different definitions and operationalizations of the construct either fail to interrelate significantly, or have only a moderate relationship (Budner, 1962; Hamilton, 1957; Kenny and Ginsberg, 1958). Further, measures of tolerance for ambiguity do not correlate consistently with measures of theoretically related constructs (Hamilton, 1957; Kenny and Ginsberg, 1958).

The literature on self report measurement of tolerance for ambiguity (Budner, 1962; MacDonald, 1970; Norton, 1975; O'Conner, 1952; Rehfisch, 1958; Rydell and Rosen, 1966; Webster, Sanford and Freeman, 1955) indicates that the construct has been generally assumed by investigators to be a personality trait which operates similarly in most areas of an individual's experience. The proposition that tolerance for ambiguity is specific to various domains of experience has not been tested. If tolerance for ambiguity is a domain specific trait, one would expect the weak construct validity which has been reported for the measures which are heterogeneous with respect to experiential domains.

This study explicitly tests the hypothesis that individuals will express relatively independent degrees of tolerance for

ambiguity in different experiential domains. A theoretical rationale for the hypothesis may be found in Scott's (1969) challenge of the assumption that attitudinal responses will be similar over experiential domains, and in Vannoy's (1965) demonstration that cognitive complexity-simplicity may vary considerably over areas of an individual's experience.

Method

Instrument Development

The first task was identification of experiential domains to which tolerance for ambiguity may be specific. Next an original measure of tolerance for ambiguity which assesses individual differences within the designated domains was developed and pretested. Following this, the hypothesis testing portion of the study was implemented.

Four experiential domains were selected on the basis of converging literature on measurement of values conceived as preferences for various kinds of activities (Allport and Vernon, 1931; Maller and Glasser, 1939; Spranger, 1928; Thurstone, 1932; Van Dusen, Wimberly and Mosier, 1939). These value domains are: (1) theoretical, including activities related to investigation, research and scientific curiosity; (2) social, including activities which involve service and help to people as well as a desire to be with people; (3) economic, including activities concerning the accumulation of wealth and power; (4) aesthetic, including activities concerning art, dance, music and literature.

An original measure of tolerance for ambiguity was developed comprised of 64 items original or adapted from the Budner (1962) and MacDonald (1970) scales. Each experiential domain was represented by 16 items. Within each domain, items were written or adapted to reflect each of the three classes of ambiguous stimuli identified by Budner (1962): novelty, vagueness and complexity. For example, the following item reflects theoretical novelty: "Science attracts me because it offers a lot of new ideas." Agreement or disagreement with each item was indicated on a seven-point response scale. Approximately one half of the items were reverse worded to control for response bias. A score was generated for each subscale by adding the scores (1-7) for individual items comprising the subscale.

Pretest. The 64 items were randomized and pretested in questionnaire form with 119 undergraduate students at California State University, Chico.

Retention of items for the hypothesis testing study was based on three criteria. (1) Skewness: Any item with more than 90% of responses in two adjacent response categories was rejected, as it was not considered to adequately discriminate individuals. (2) Item Total Score Correlation: If the correlation of an item to the total score of its subscale excluding that item did not exceed .10, it was rejected as not reflecting the content of other items in its subscale. (3) Interitem Correlations: Any item which correlated

negatively with any other items in the matrix of interitem correlations of its subscale was rejected as it, similarly, could not be considered to reflect the common content of that subscale. Table 1 presents the resulting 40 item measure, grouped by subscale.

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Insert Table 1 about here

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Participants

Participants in the study which tested the domain specificity hypothesis were a separate sample of 125 California State University, Chico undergraduates. The participants, 72% of whom were female, ranged in age from 17 to 52 with a median age of 20. They volunteered for the study to fulfill a research participation requirement in their psychology courses and were administered the questionnaire in three groups during a one week period.

Results

The domain specificity hypothesis was tested by comparing the split-half reliability of each tolerance for ambiguity subscale with the correlations between that subscale and other subscales of tolerance for ambiguity. If the internal consistency of subscales are significantly greater than their correlations with other subscales, they are considered distinct and the hypothesis is supported.

Despite pretesting and item selection, subscale split-half reliabilities for administration of the 40 item measure were unacceptably low; theoretical (.36), social (.36), economic (.32), and aesthetic (.46). This prompted reapplication of the item selection criteria described in the method section. Items not meeting the skewness, item-total, or subscale interitem correlation criteria were deleted in computing subscale scores. The 10 items not included in scoring are indicated in Table 1. This revised scoring procedure improved considerably the split-half reliabilities of all four subscales.

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Insert Table 2 about here

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Table 2 presents the split-half reliabilities for, and correlations among tolerance for ambiguity subscales. For purposes of statistical testing, the split-half reliabilities of each of the tolerance for ambiguity subscales and the intercorrelations among subscales were transformed into Z score equivalents. The Z score equivalents of the correlations between a given subscale and each of the other subscales were averaged. The Z score for each subscale's reliability was then compared, using the t test, with the mean of Z scores for that subscale's correlation to other subscales. The values of t for the social (2.29, $p < .02$), aesthetic (2.05, $p < .02$), and theoretical (1.69, $p < .05$) subscales

are significant, supporting the hypothesis of domain specificity in regard to these domains. The value of *t* (.59) for the economic subscale is nonsignificant.

Discussion

A consideration in interpreting the findings is the effect on results of deleting items in final scoring of the tolerance for ambiguity subscales. Item selection and rescoring could have produced slightly inflated reliabilities for subscales by capitalizing on chance homogeneity, and thereby may have biased testing of the hypothesis. Although exclusion of items may indeed have inflated the subscale reliabilities, inclusion of items which do not meet conventional psychometric criteria would have severely limited the utility of the scales for testing the study hypothesis. Further, item selection was conducted without reference to interscale correlations and would not be expected to systematically promote independence or dependence among the tolerance for ambiguity subscales.

There are both theoretical and practical implications in the present finding that tolerance for ambiguity shows significant specificity in three of the four domains studied. The significant value of *t* for three subscales seems to question the proposition that tolerance for ambiguity is a broadly general trait. Currently popular measures (Budner, 1962; MacDonald, 1970) which treat

tolerance for ambiguity as a personality trait which operates similarly in most areas of an individual's experience may not be appropriate for testing theoretical propositions involving the construct. Results reported here seem to indicate that more appropriate measurement may be achieved by conceptualizing tolerance for ambiguity as a trait which is specific to at least the theoretical, social and aesthetic domains.

A finding of domain specificity in tolerance for ambiguity supports Scott's (1969) reservations about the generality of cognitive traits and is consistent with Mischel's (1973) view of the situational specificity of personality traits. Mischel contends the specificity of personality traits reflects a human discriminative facility, a responsivity to changing environmental conditions or stimulus situations in the regulation of behavior. Individuals are assumed to discriminate among stimulus situations and consequently the generality across situations of personality traits is questionable. Mischel considers the term "discriminative facility" preferable to "specificity" because the former avoids negative implication that personality traits are inconsistent, fickle and unreliable. Similarly, the domain specificity reported here does not indicate that tolerance for ambiguity is an unstable or non-enduring trait. The moderate support for the hypothesis may be interpreted as meaning that individuals possess a discriminative facility which allows relatively independent degrees of response to

ambiguous situations in different experiential domains. Those individuals intolerant of ambiguity in the social domain may be consistently intolerant in that domain but not necessarily intolerant in the theoretical domain.

Finally although the four value areas that were used to represent experiential domains are suggested by the literature on value measurement, each may not be salient to the same degree in a student population. The theoretical, social and aesthetic domains refer to activities and situations which are experienced by most students. The economic domain, which did not show significant specificity, refers to situations which many students have not yet experienced like financial investment (item 14) and financial strategy (item 40). If this is the case, the economic domain may be more appropriate in measurement of tolerance for ambiguity in older, nonstudent populations. This point further underscores the major implication of this study, that further development of tolerance for ambiguity measures may proceed more profitably using the domain specific model rather than the general trait model.

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Footnotes

1. An earlier version of this report was presented at the Western Psychological Association meeting in Los Angeles, May, 1976.

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Table 1

Tolerance for Ambiguity Items

Theoretical

1. In the long run it is possible to get more done by tackling small simple problems rather than large complicated ones.

*2. Very few ideas are really new.

4. Science attracts me because it offers a lot of new ideas. (-)

8. I usually like to work on a problem even if there is little possibility of coming out with a clear cut answer. (-)

19. Before an examination, I feel much less anxious if I know how many questions there will be.

23. A teacher who can't come up with a definite answer probably doesn't know too much.

*27. The best way to understand complex problems is to focus on their larger aspects instead of breaking them down into smaller pieces. (-)

33. One thing that bothers me about science is that it has become too complicated for the average person to understand.

36. When I choose a problem to tackle, I like to find something that I have never had any experience with before. (-)

*37. College students would be better off to pick a major and stick with it rather than "shopping around."

Social

6. I like to know what to expect in any social relationship.

*7. I like to get involved in the personal problems of my friends. (-)

9. The simpler a person's lifestyle the easier it is to get along with them.

13. If people could lead less complex lifestyles many of the problems of human relations would be solved.

22. It bothers me when I don't know where another person is coming from.

*28. I find it easy to remain relaxed in a social situation where I have little control over the events. (-)

32. I occasionally get irritated over the fact that people seldom say what they really mean.

35. People who are unsure and uncertain about things, make me feel uncomfortable.

38. I like to know what it is that I am getting into before I commit myself to another person.

Economic

3. A good job is one where what is to be done and how it is to be done is always clear.

5. The best way to avoid suffering a financial loss is to never tolerate any vagueness.

*10. There is no such thing as a basic, unchanging political or economic truth. (-)

11. The trouble with most jobs is that they involve doing too many complicated things.

14. The best way to be successful in financial investment is to pick a tried and true strategy and to stick with it.

*21. In the long run, society benefits when people have a variety of political values and ideals. (-)

24. It upsets me to know that elected officials make many decisions without knowing all the facts.

26. It really bothers me when I buy something without knowing all the facts about the product.

39. Government would be much more effective if it were less complicated.

*40. A person who is open to new ideas is more likely to make money in business. (-)

Aesthetic

12. I would rather read short stories than a long complex novel.

15. I enjoy listening to new kinds of music. (-)

16. There are two kinds of art -- good and bad.

*17. A person who leads an eventful life in which there are many surprises and unexpected happenings, really has a lot to be grateful for. (-)

18. The trouble with art is that there are no clear ways to tell the good work from the bad.

*20. Playing a musical instrument is not as complex as most people think.

25. I prefer art which gives me new ideas. (-)

29. I dislike movies where the message is unclear.

30. I prefer to read books which give me a new outlook on life. (-)

31. I have a hard time reading a book if there is no clear plot.

34. Impressionistic paintings appeal to me. (-)

Note. Items with an asterisk were deleted in computing subscale scores.

Table 2

Split-half Reliabilities and Product-moment Correlations among Tolerance for Ambiguity Subscales (N=125)

	Subscales			
Subscales	Theoretical	Social	Economic	Aesthetic
Theoretical	.45[a]	.18	.30	.29
Social		.52	.42	.23
Economic			.44	.41
Aesthetic				.53

[a]Subscale split-half reliabilities in diagonal